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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/846,069	04/30/2001	Henri Jacques Suermondt	10010076-1	4518

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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER	
EHICHIOYA, FRED I	

ART UNIT	PAPER NUMBER
2172	

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/846,069	SUERMONDT ET AL.	
	Examiner	Art Unit	
	Fred I. Ehichioya	2172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3 - 9, 11 - 20, 22, 23, 25 - 27, 29 - 36, and 38 - 44* is/are rejected.

7)☒ Claim(s) *2,10,21,24,28,37 and 45* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to communications: RCE and Preliminary amendments, both filed 4/12/2004 to the original application filed 04/30/01.
2. Claims 1 – 45 are pending. Claims 36 – 45 have been added.

Continued Examination Under 37 CFR 1.114

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/12/2004 has been entered.

Claim Objections

4. Claims 2, 10, 21, 24, 28, 37 and 45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 36, 38, 39, 42, 43 and 44 are rejected under 35 U.S.C 102(b) as been anticipated by U.S. Patent 6,519,580 issued to David E. Johnson et al (hereinafter "Johnson").

Regarding claim 36, Miller teaches a method for categorization of an item, comprising:

analyzing the item with a plurality of categorizers, each having an associated category, to create a list of item features (see column 4, lines 22 – 29);

determining a degree of correspondence between features of a category and each of the list of item features (see column 3, lines 48 – 65);

using the degree of correspondence of at least one of the item features to invoke an additional categorizer (see column 4, lines 39 - 48); and

categorizing the item based on the degrees of correspondence (see column 3, lines 20 – 22).

Regarding claim 38, Miller teaches using a categorizer system knowledge base for determining the degree of correspondence for the category with the list of item features (see column 4, lines 7 – 23).

Regarding claim 39, Miller teaches listing the associated categories and respective degrees of correspondence on a list; and categorizing from the list (see Fig.2A).

Regarding claim 42, Miller teaches establishing a categorizer system knowledge base for a topic hierarchy (see column 4, lines 22 – 28).

Regarding claim 43, Miller teaches listing a plurality of labels for each of the associated categories (see column 3, lines 35 – 41); and
training a categorizer system trainer using a plurality of items having known categories and the plurality of labels to provide a categorizer system knowledge base (see column 9, lines 21 – 38).

Regarding claim 44, Miller teaches providing a categorizer system knowledge base (see column 4, lines 26 – 28); and
using a plurality of items with known categories to learn knowledge in the categorizer system knowledge base (see column 3, lines 48 – 67).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3 – 9, 11 – 20, 22, 23, 25 – 27, 29 – 35, and 40 – 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,899,995 issued to Marshall A. Miller et al (hereinafter "Miller") in view of Non-Patent Document "Quality evaluation of some combinations of unit random number generators and unit normal transformation algorithms, 1981, IEEE Press, Pages 129 – 149 by Winnie Chen et al (hereinafter "Chen").

Regarding claims 1, 12 and 23, Miller teaches a method for categorization of an item comprising:

providing a plurality of categories organized in a hierarchy of categories (see column 5, line 39 thru column 6, line 21);

providing a plurality of categorizers corresponding to the plurality of categories (see column 3, lines 53 – 54 and column 4, lines 22 – 24);

featurizing the item to create a list of item features (see column 3, lines 49 – 67);

using the list of item features in a categorizer system including the plurality of categorizers for determining a plurality of levels of goodness (see column 6, lines 39 – 60);

using one of the plurality of levels of goodness for invoking an additional categorizer of the plurality of categorizers as required (see column 4, lines 22 – 24);

categorizing the item in the categorizer system in the plurality of categories based on the respective plurality of levels of goodness (see column 4, lines 22 – 29); and

returning the item categorized (see column4, lines 52 – 55).

Miller does not explicitly teach levels of goodness.

However, Chen teaches levels of goodness (see Page 132, paragraphs 2 – 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Chen with the teaching of Miller wherein the goodness of fit is test used in analyzing empirical estimate of the distribution of the random variables of a given data. The motivation is that goodness of fit tests which analyze a set of data can be used to describe the variables distribution.

Regarding claims 3, 14 and 25, Miller teaches using a categorizer system knowledge base for determining the levels of goodness (see Chen: Page 132 paragraph 2) for a category with the list of item features (see column 3, lines 49 – 67).

Regarding claims 4, 15 and 30, Miller teaches listing the plurality of categories and the respective levels of goodness on a list (see Chen: Page 132, paragraphs 5 – 7); and

categorizing from the list (see column 6, lines 1 – 18).

Regarding claims 5, 16, 31 and 40, Miller teaches returning one category for the item among the plurality of categories selected from a group consisting of the one category with the best levels of goodness (see Chen: Page 133) for all the plurality of categories and with the best levels of goodness for which determining is completed where all of the plurality of categories are not compared (see column 3, line 53 – column 4, line 21).

Regarding claims 6, 17, 32 and 41, Miller teaches

returning a plurality of categories for the item among the plurality of categories returns a plurality of categories selected from a group consisting of categories up to a fixed number of the plurality of categories, categories having more than a fixed levels of goodness (see Chen: page 133), categories fulfilling a user specified preference,

categories not from a categorizer, and categories which are a combination thereof (see column 3, line 49 – column 4, line 38).

Regarding claims 7, 18, 33 and 42, Miller teaches

returning the category for a plurality of items establishes a categorizer system knowledge base for a topic hierarchy (see column 4, lines 22 – 28).

Regarding claims 8, 19, 26, 34 and 432, Miller teaches

listing a plurality of labels for each of the plurality of categories (see column 3, lines 35 – 41); and

training a categorizer system trainer using a plurality of items having known categories (see column 9, lines 21 – 38) and

the plurality of labels to provide a categorizer system knowledge base (see column 3, lines 35 – 42).

Regarding claims 9, 20 and 44, Miller teaches providing a categorizer system knowledge base (see column 4, lines 26 – 28);

using a plurality of items with known categories to learn knowledge in the categorizer system knowledge base (see column 3, lines 48 – 67).

Regarding claim 11, Miller teaches a method for categorization of an item comprising:

providing a plurality of categories organized in a hierarchy of categories (see column 5, line 39 – column 6, line 21) and having

respective lists of category features using a categorizer system knowledge base for determining the lists of category features (see column 6, lines 39 – 60);

providing a plurality of categorizers corresponding to one of the plurality of categories (see column 3, lines 53 – 54 and column 4, lines 22 – 24);

featurizing the item to create a list of item features (see column 3, lines 49 – 67);

using the list of item features in a categorizer system including the plurality of categorizers (see column 6, lines 39 – 60);

using one of the plurality of levels of goodness for invoking an additional categorizer of the plurality of categorizers as required (see column 4, lines 22 – 24);

categorizing the item in the categorizer system in the plurality of categories based on the respective plurality of levels of goodness (see column ;

listing the plurality of categories and the respective levels of goodness on a list (see column 5, line 39 – column 6, line 21); and

returning a category for the item from the list (see column 4, lines 52 – 55).

Miller does not explicitly teach levels of goodness

However, Chen teaches using the list of item features in a categorizer system including the plurality of categorizers (see Miller: column 6, lines 39 – 60) with the lists of category features to respectively determine a plurality of levels of

goodness, the plurality of levels of goodness determined using a process to quantify the plurality of levels of goodness, to prioritize the plurality of levels of goodness, and to resolve two levels of goodness into a third levels of goodness (see page 132, paragraph 6 and page 133, paragraphs 1 – 4);

categorizing the item in the categorizer system in the plurality of categories (see Miller: column 4, lines 22 – 24) based on the respective plurality of levels of goodness (see page 132, paragraph 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Chen with the teaching of Miller wherein the goodness of fit is test used in analyzing empirical estimate of the distribution of the random variables of a given data. The motivation is that goodness of fit tests which analyze a set of data can be used to describe the variables distribution.

Regarding claim 22, Miller teaches a method for categorization of a document comprising:

providing a plurality of categories organized in a. hierarchy of categories (see column 5, line 39 – column 6, line 21) and having respective lists of category features using a categorizer system knowledge base resulting from determining a plurality of documents for determining the lists of category features (see column 6, lines 39 – 60);

providing a plurality of categorizers corresponding to the plurality of categories (column 3, lines 53 – 54 and column 4, lines 22 – 24);

featurizing the document to create a list of document features (see column 3, lines 49 – 67);

using the list of document features in a categorizer system including the plurality of categorizers with the lists of category features to respectively determine a plurality of levels of goodness (see column 6, lines 39 – 60);

using one of the plurality of levels of goodness for invoking an additional categorizer of the plurality of categorizers as required (see column 4, lines 22 – 24);

categorizing the document in categorizer system including the plurality of categorizers in the plurality of categories based on the respective plurality of levels of goodness from the list (see column 4, lines 22 – 29);

listing the plurality of categories as the document is compared and the respective levels of goodness on a list (see column 9, line 63 – column 10, lines 18); and

returning a category for the document from the list (see column 4, lines 52 – 55).

Miller does not explicitly teach levels of goodness

Chen teaches categorizing the document in categorizer system including the plurality of categorizers in the plurality of categories (see Miller: column 4, lines 22 – 29) based on the respective plurality of levels of goodness from the list (see page 132, paragraphs 2, 4 and 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Chen with the teaching of Miller wherein the goodness of fit is test used in analyzing empirical estimate of the distribution of the

random variables of a given data. The motivation is that goodness of fit tests which which analyze a set of data can be used to describe the variables distribution.

Regarding claims 27 and 35, Miller teaches a system for categorization of an item comprising:

a categorizer system knowledge base having a plurality of categories organized in a hierarchy of categories and having respective lists of category features (see column 5, line 39 – column 6, line 21);

a featurizer for featurizing the item to create a list of item features (see column 3, lines 49 – 67); and

a categorizer system connected to the categorization system knowledge base including (see colum 4, lines 27 – 29):

a plurality of categorizers having one of the plurality of categories (see column 3, lines 53 – 54 and column 4, lines 22 – 24), the

plurality of categorizers for using the list of item features with the lists of category features to respectively determine a plurality of levels of goodness, the plurality of categorizers categorizing the item in the categorizer system in the plurality of categories based on the respective plurality of levels of goodness (see column 3, lines 53 – 54 and column 6, lines 39 – 60),

a mechanism for using one of the plurality of levels of goodness for invoking

an additional categorizer of the plurality of categorizers as required (see column 4, lines 22 – 24)

a listing mechanism for listing the plurality of categories and the respective levels of goodness on a list (see column 9, line 63 – column 10, line 18); and a return for returning the item categorized (see column 4, lines 52 – 55).

Miller does not explicitly teach levels of goodness.

Miller does not explicitly teach levels of goodness

Chen teaches levels of goodness (see page 132, paragraphs 2, 4 and 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Chen with the teaching of Miller wherein the goodness of fit is test used in analyzing empirical estimate of the distribution of the random variables of a given data. The motivation is that goodness of fit tests which which analyze a set of data can be used to describe the variables distribution.

Regarding claim 29, Miller teaches the categorizer system knowledge base determines the lists of category features (see column 4, lines 26 – 28).

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Chen and further in view of Non-Patent Document "Message classification in the call center", 2000, Morgan Kaufmann Publishers inc., pages 158 – 165 by Stephen Busemann et al (hereinafter "Busemann"),

Regarding claim 13, Miler or Chen does not explicitly teach wherein: determining the plurality of levels of goodness includes using a process selected from a group consisting of Naive Bayes, quantitative decision-tree classifiers such as C4.5, Bayesian networks, rule-based multi-class classifiers that output a degree of goodness, conditional probability statements, simple heuristics, and a combination thereof.

Busemann teaches determining the plurality of levels of goodness includes using a process selected from a group consisting of Naive Bayes, quantitative decision-tree classifiers such as C4.5, Bayesian networks, rule-based multi-class classifiers that output a degree of goodness, conditional probability statements, simple heuristics, and a combination thereof (see page 162, table 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Busemann with the teaching of Miller and Chen wherein is categorization and analysis tool. The motivation is that Naïve Bayes simplifies and makes categorization easy.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred I. Ehichioya whose telephone number is 703-305-8039. The examiner can normally be reached on M - F 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene can be reached on 703-305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fred I. Ehichioya
Examiner
Art Unit 2172
May 31, 2004